Chapter 2.35

DESIGN STANDARDS FOR STREET TREES

The Department of Parks and Recreation is assigned responsibility for administration of these design standards.

Section 1. GENERAL REQUIREMENTS

The selection, planting, maintenance and removal of trees, shrubs and hedges along the public ways within the City of Lincoln substantially affect such matters as pedestrians and vehicle safety, the location and maintenance of utility services, tree maintenance costs, the incidence of tree diseases, and the general appearance of the cityscape; therefore, it is hereby found and determined that such selection, planting, maintenance and removal are matters of city-wide concern over which the city must exercise the control set forth in the following standards and specifications.

1. Street trees not included in a landscape screen shall be installed following the completion of the paving and finished grading of the street and within four (4) years of final plat approval in accordance with Lincoln Municipal Code 26.11.040.

2. No trees shall be planted closer than five (5) feet to any utility service lines to the home. The location of the service lines shall be considered, for distance purposes, to be the surface of the ground above the service line.

3. Street trees on corner lots to be located 25 feet, and preferably 30 feet from the property corner adjacent to the street R.O.W. intersection.

4. The subdivider shall propose the species of street trees for each street in conformance with the Master Street Tree plan as stipulated in Lincoln Municipal Code 12.20.020. The selection shall be from the "City of Lincoln, Nebraska Approved Trees for Streets."

5. All street trees, when planted, shall not be less than one inch in diameter as stipulated in Lincoln Municipal Code 12.20.050, subparagraph (a).

6. There shall be at least one (1) street tree per lot unless the lot is less than 50 feet in width in which case the trees would be spaced as follows:

a. Small Trees: Thirty (30) to thirty-five (35) feet from the nearest existing trees, public or private and spaced forty (40) feet from each other, unless otherwise approved by the City Arborist.

b. Medium Trees: Forty (40) to forty-five (45) feet from the nearest existing trees, public or private, and spaced forty (40) to forty-five (45) feet from each other, unless otherwise approved by the City Arborist.

c. Large Trees: Forty-Five (45) to fifty-five (55) feet from nearest existing trees, public or private, and spaced fifty (50) to fifty-five (55) feet from each other, unless otherwise approved by the City Arborist.

Corner lots shall require two or more street trees depending on the length of frontage on each street for such lots.

Lots with 100 to 150 feet of frontage shall require two (2) street trees and for each additional 50 feet of frontage one (1) additional street tree.

7. The same species of tree should not be used on streets which are generally parallel and within five (5) blocks apart, unless otherwise approved by the City Arborist.

8. If a species of tree has been approved on a temporary dead end street, the same species of tree should be used on the extension of the street into the new subdivision.

9. More than one species of tree may be allowed to be planted on the same street provided the designated street tree for that same street is according to the Master Street Tree Plan and other compatible species are those identified as an approved grouping of street trees from the approved trees for streets for Lincoln, NE.

10. In order to encourage solar access, where subdivision or community unit plans have easements, covenants, or other controlling regulatory measure to protect solar access to building envelopes then the design standard "I" may be modified to allow approved smaller or dwarf variety trees of the same genus on the north side of east-west streets, provided however that trees of the same species be used if possible.

NOTE: The planting procedures and maintenance of street trees are covered in the General Requirements section attached.

11. Plants shall be nursery grown, first class material, straight single stemmed and must meet the standards set forth in "American Standard for Nursery Stock" (ANSI Z60.1-1990 or most current edition) and as further specified herein. Plant Material shall be obtained from established commercial licensed nursery growers and installed by licensed nursery and/or landscape contractors.

12. All plant material shall comply with all applicable State and Federal laws, including inspection certifications which shall include the project number and the plant material that the certification covers. All plant material is subject to inspection b representatives of the State and Federal Governments.

13. All plant material furnished shall be true to name and type; legible labels shall be furnished to insure that all species, varieties, boxes, bundles, bales or other containers are identified. The information on the label shall cover the botanical genus, species, common name and size or age of each species or variety.

14. Plant material from unapproved sources will be rejected. The spring planting season shall be from March 1 to May 30 for all deciduous material and from March 15 to May 15 for all coniferous material. The fall planting season shall be from October 1 to December 1 for deciduous material and from September 15 to November 15 for coniferous material. Planting operations shall be performed during these seasons only, except when prior written permission is obtained from the City Arborist. The actual planting shall be performed during these times in these seasons which are normal for such work as determined by weather conditions and accepted practice in the locality.

15. Plants shall be true to species and variety specified and nursery grown in accordance with good horticultural practices. Plant material collected from wild or native stands will not be accepted. Heeled in stock will not be acceptable. Plants cut from larger sizes to meet size specifications will not be accepted.

16. Plants shall be sound, healthy, vigorous, well branched and densely foliated if in leaf, free of disease, insects, eggs or larvae and shall have healthy well-developed root systems. They shall be free from physical or mechanical damage or conditions that would prevent thriving growth.

17. The bark of trees shall be healthy and firm with no indications of fungus, cankers or galls, insect bores, diebacks, frost cracks, sunscald or mechanical injury. Any of these defects will be reason for rejection.

18. Plants shall exhibit adequate and healthy twig growth and have well formed live buds. Branches should diverge from the trunk at a wide angle, except in those varieties that normally grow in narrow upright forms. Plants shall have normal, well developed branches, be uniformly and fully branched as seen from all sides, have good crotch angles and a vigorous root system. All plants shall be first class representatives of their specie or variety.

19. Trees with multiple leaders, unless specified, will be rejected.

20. Plants that meet specified sizes, but do not possess a normal balance between height and spread shall be rejected.

21. Plant materials which are planted and later discovered to be not true to name shall not be allowed to remain in place.

22. A representative sample of all container grown and/or pot grown material may be required by the City Arborist for approval prior to planting.

23. All container grown, pot grown and balled and burlaped (B&B) plant material is subject to internal examination of the ball at any time to ascertain the condition of the roots and the ball.

24. Trees may be moved and planted with an approved mechanical tree spade. The tree spade shall have a manufacturers size rating equal to or exceeding the tree sizes to be moved. The machine shall be approved by the City Arborist prior to use.

25. Unnecessary injury to or removal of fibrous roots from the plant material is cause for rejection of the plant material. The soil for balled, container grown or pot grown material shall be in such condition so as to insure no crumbling or cracking. Balls shall be wrapped with burlap prior to removal from the ground.

26. All plants shall be transported in such a manner as to assure proper protection against freezing, drying, breaking, over-heating or other injury. All precautions consistent with accepted practices shall be taken to insure the arrival of plants at their destination are in good condition for successful growth.

27. Trees with a damaged or crooked leader or having pruning cuts over 3/4 inch in diameter that are not completely callused, will be rejected.

28. Substitution of specified plant material will not be permitted, unless authorized by the City Arborist.

29. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the City Arborist. If larger plants are approved, the root system, container and/or root ball shall be increased in proportion to the size of the plant..

30. Balled plant material shall have a solid ball of earth of adequate size held in place securely and wrapped with burlap and tightly bound with twine or rope. Soil balls may also be secured with wire baskets. The soil for balled material shall be in such condition as to ensure no crumbling or cracking. Broken, loose, processed balled or balled and potted plant materials will be rejected.

31. Bare root plant material shall have abundant root growth and fibrous feeder roots with good color and moisture. Kinked, circling and/or girding roots are not acceptable and plant material having such root systems will be rejected.

32. Container grown plant material shall be well established in their containers. Container plant material which shows evidence of being root-bound, overgrown, recently canned or has girdling roots shall be rejected.

33. A processed balled shade or flowering tree (i.e. one dug bare root, while dormant, to which a growing medium is added around the roots to form a ball) will not be acceptable.

34. Plant material for street tree plantings shall have proper height of branching in relationship to the size and kind of tree so that the crown of the tree will be in good balance with the trunk (i.e. 1/3 to 1/2 the total height of the tree is a trunk free of branching and other 1/2 to 2/3 well branched tree crown.)

35. Planting locations will be marked by the City. Installation of street trees shall be coordinated with the City Arborist prior to any being planted.

36. Planting pits dug should be backfilled the same day. If any planting pits will be left open when work is not in process or create a safety hazard to the public, such pits shall be covered over or be property barricaded by whomever is installing the plant material.

37. Plants should not be planted deeper than they were in their former growing location. To eliminate settling, the bottom of the planting hole should be undisturbed soil so that it will give solid support to the bottom of the root ball/root system.

38. Plants must be plumb (straight) and centered in the planting hole before backfilling and after planting is completely done.

39. If the plant is bare-root, the roots shall be spread out in their natural position, not bent upwards or backwards, when positioned in the planting hole and before backfilling is done. The roots should be straightened to prevent doubling under, crowding and crossing of main roots. Roots that may later girdle the main roots or trunk should be cut off with sharp pruning shears before backfilling is done. Refer to Page 11 of this chapter.

40. If the plant is in a container or pot, the sides of the container or pot shall be carefully cut and completely removed after setting the plant in the planting hole and before backfilling. Refer to Page 11 of this chapter.

41. If the plant is balled and burlaped, all rope, strings, twine, wire and wrapping from the top one-half (1/2) of the ball shall be removed after the plant has been set in the planting hole. The balance of the wrapping is to be left intact around the root ball. All waterproof or water repellent wrappings shall be removed from the ball. Refer to Page 11 of this chapter.

42. Sticks, sod, dirt clods, large rocks, construction debris or other foreign material which would tend to form air pockets shall not be included in the backfill.

43. Planting pits are to be backfilled with the same soil that is excavated from them. Topsoil and subgrade soil shall be loosened and mixed to a depth of twelve (12) inches before backfilling. Topsoil shall be gently firmed around the plant to hold it in place and to eliminate air pockets. When pits are approximately two-thirds (2/3) full, they are to be thoroughly watered to also eliminate air pockets. After this initial watering, topsoil is to be installed to the top of pit and watered. Puddled soil conditions (over watering) are to be avoided. Planting pits for the plant materials shall be the dimensions shown in the plans.

44. After the planting pit has been completely backfilled, rake a ridge of soil two (2) to four (4) inches high around the outside margin of the pit to create a reservoir for watering.

45. Top of planting pits are to be mulched with a two (2) to four (4) inch layer of wood chips or bark chips covering the entire area excavated for planting. Chips shall not contain any foreign material.

46. Plants are to be thorough and properly watered immediately after planting. Over watering is to be avoided.

47. Wrapping of trunks with tree wrap is not required. All tree wrap, if any, shall be removed from trunks immediately after planting by the contractor.

48. Staking shall be required after planting.

49. When staking is done, one (1) 2 inch x 2 inch stake of suitable length (six (6) feet long) shall be installed at an angle to avoid the root system. The tree should be tied with a figure eight loop between the tree and stake to allow for flexibility. Do not tie tree too rigidly to the stake. Refer to Page 12 of this chapter.

50. Minimum size of wire used for staking shall be 14 gauge wire. Hose shall be rubber and have an inside diameter of at least one-half (1/2) inch and minimum length of twelve (12) inches. Soft drawn or loc-tite plant ties may be used in lieu of hose and wire guying.

51. Pruning at time of planting shall only be done if necessary. All broken, weak and interfering (rubbing) branches shall be properly removed after the tree has been planted. Drop crotch pruning shall be done and pruning cuts properly made so that the branch collar and/or branch bark ridge are not cut. All other sound and healthy branches should be left intact to provide a maximum leaf surface to manufacture food for crown and root growth. Refer to Page 13 of this chapter

52. Location of all underground facilities/utilities before planting is required. Whomever shall be installing the plant material shall contact **DIGGER'S HOTLINE FOR BURIED UTILITIES** at 1-800-331-5666 (between 7:30 a.m. and 4:30 p.m. Monday through Friday) 48 hours before digging to request that buried utilities, power lines and telephone/cable television lines be located where tree pits are to be dug.

53. Relocation of planting sites will be necessary if less than five (5) feet from lateral underground utility lines (i.e. gas, water or power line leading from street to house is less than five (5) feet from location marked). In such cases, please contact the City Arborist so different planting location(s) can be marked.

54. The establishment period will follow the completion of all planting in a planting season and shall extend for a period of one year. The establishment period will not begin until all of the following items of work as required in the specifications, the special provisions, and the plans have been performed on each and every plant material; proper planting, backfilling, watering, staking, guying, water basin construction and mulching. All plant material shall be in an acceptable growing condition when the project enters in the establishment period.

55. During the establishment period, the developer shall properly maintain all plant materials planted and shall replace all unacceptable and/or dead plant material. Establishment procedures shall include watering as often as required by necessity, cultivating, repairing damage to the water basins, keeping the stakes firm and guys adjusted, and mulching.

56. Upon completion of the establishment period, the City Arborist will make an inspection of the plant material for acceptability. After the final inspection has been made, the developer and/or the contractor will be notified in writing of the quantities of the plant material that shall be replaced and when. Plant replacement shall be at the developer's expense. The developer will be notified in writing when his/her establishment responsibilities on the acceptable plant materials have been terminated.

57. Following the day of the final inspection, any replacement planting needing to be done shall be replaced in accordance with the design standards. The developer's responsibility for all such replacements shall extend for 150 days after such time that the last plant to be replaced is properly planted, complete and accepted by the City Arborist.

Section 2. APPROVED TREES FOR STREETS

ATTENTION PROPERTY OWNERS: A PERMIT TO PLANT ANY OF THESE TREES ON CITY PROPERTY NEEDS TO BE OBTAINED BEFORE PLANTING IS DONE.

REQUIRED MINIMUM TREE TRUNK SIZE IS ONE (1) INCH IN DIAMETER.

LARGE (Over 40 Feet Tall)	**Height**	**Width**	**Shape**	**Color**
MAPLE				
'Emerald Queen' Norway Maple	50	40	Broad Oval	Yellow
'Emerald Lustre' Norway Maple	45	40	Rounded	Yellow
'Deborah' Norway Maple	45	40	Broad Oval	Bronze/Red
'Red Sunset' Red Maple	45	35	Upright Oval	Red-Orange
'Autumn Blaze' Red Maple	45	40	Broad Oval	Red-Orange
'Green Mountain' Sugar Maple	45	35	Oval	Red-Orange
'Legacy' Sugar Maple	50	35	Moderate Pyramidal	Red-Orange
ASH				
'Patmore' Green Ash	45	35	Upright-Oval	Yellow
'Marshall Seedless' Green Ash	50	40	Broad Oval	Yellow
'Autumn Purple' White Ash	45	30	Broad Globe	Red-Purple
OAK				
Northern Red Oak	50	45	Rounded	Red
Swamp White Oak	45	45	Rounded	Bronze-Red
Bur Oak	55	45	Broad Oval	Yellow-Brown
HONEYLOCUST				
'Skyline' Honeylocust	45	35	Broad Pyramidal	Gold
'Shademaster' Honeylocust	45	35	Broad Vase	Yellow
LINDEN				
'Greenspire' Linden	40	30	Moderate Pyramidal	Yellow
'Redmond' Linden	40	25	Moderate Pyramidal	Yellow
OTHERS				
Kentucky Coffee Tree	50	40	Broad Oval	Yellow
Hackberry	40	35	Broad Rounded	Yellow
'Autumn Gold' Ginkgo	50	40	Broad Pyramidal	Yellow
'Princeton Sentry' Ginkgo	50	25	Narrow Pyramidal	Yellow

MEDIUM (20-40 Feet Tall)	Height	Width	Shape	Color
'Imperial' Honeylocust	35	35	Broad Pyramidal	Yellow-Gold
'Columnar' Norway Maple	35	15	Narrow Upright	Yellow
'Aristocrat' Flowering Pear	40	30	Broad Pyramidal	White Flower(S) Red (F)
'Redspire' Flowering Pear	35	25	Narrow Pyramidal	White Flower(S) Red(F)
'Chanticleer' Flowering Pear	40	15	Narrow Pyramidal	White Flower(S) Red(F)
'Capital' Flowering Pear	35	12	Narrow Pyramidal	White Flower(S) Red(F)
Eastern Redbud (Single Trunk Form)	25	25	Rounded	Yellow
'Robinson' Flowering Crab	25	20	Rounded	Pink Flower(S) Orange(F)
'Autumn Brilliance' Serviceberry (Single Trunk From)	25	18	Moderate Oval	Red-Orange
Thornless Cockspur Hawthorn (Single Trunk Form)	25	20	Rounded	White Flower(S)

SMALL (20 Feet Tall or Less)	Height	Width	Shape	Color
FLOWERING CRAB				
'Indian Summer' Flowering Crab	18	18	Broad Globe	Rose Flower (S) Yellow (F)
'Liset' Flowering Crab	15	15	Broad Globe	Red Flower (S) Yellow (F)
'Prairiefire' Flowering Crab	20	15	Moderate Globe	Pink Flower (S) Bronze (F)
'Professor Sprenger' Flowering Crab	20	20	Upright	White Flower (S)
'Snowdrift' Flowering Crab	20	20	Broad Oval	White Flower (S) Yellow (F)
'Zumi Calocarpa' Flowering Crab	20	20	Broad Globe	White Flower (S)
'Donald Wyman' Flowering Crab	20	20	Broad Globe	White Flower (S)
'Harvest Gold' Flowering Crab	20	15	Upright	White Flower (S)
OTHERS				
'Flame' Amur Maple (Single Trunk Form)	20	20	Rounded	Orange-Red
Japanese Tree Lilac (Single Trunk Form)	20	15	Moderate Globe	White Flower (June)

* Refers to fall leaf color unless otherwise noted. (S) Spring color, (F) Fall color.

Section 3. TREES THAT WILL NOT BE PERMITTED AS STREET TREES

All Poplars	All Elms	Silver Maple
Bradford Pear	Box Elder	Tree of Heaven (Alianthus)
All Evergreens	All Willows	Walnut
Birch	Cypress	Buckeye
Horsechestnut	All Cottonwoods	Pecan
Russian Olive	Mulberry	Catalpa
Pin Oak		

The following individual groupings of trees will be allowed to be planted on the same street provided one of the tree types within the individual group is the designated street tree for that same street. Groupings will not be allowed to be mixed (i.e. group #1 with group #2, #1 with #3, etc.) on the same street:

#1 Locust, Kentucky Coffeetree, Ash, Autumn Gold Ginkgo

#2 Linden, Aristocrat Pear, Redspire Pear, Chanticleer Pear

#3 Oak, Ash, Maple, Hackberry

#4 Flowering Crab, Hawthorn, Amur Maple, Serviceberry, Japanese Tree Lilac

NOTE: No candy stripes - pink/white. White Flowering Crabs together with Serviceberry, Hawthorn, Amur, Maple, Japanese Tree Lilac.

Red Flowering Crabs with Pink Flowering Crabs. Redbuds with Rose/Red Flowering Crabs.

#5 Capital Pear, Chanticleer Pear, Columnar Norway Maple, Princeton Sentry Ginkgo.

Forestry Section
Parks & Recreation Department
City of Lincoln
(402) 441-7035

TYPICAL TREE PLANTING INSTALLATIONS

Trees under 2 inches in Diameter

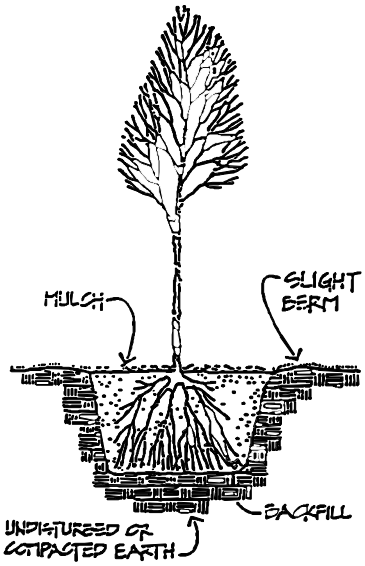


Figure 9-10. Planting a Bare Root Tree

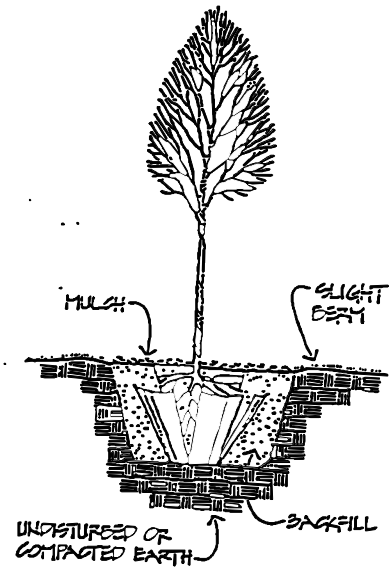


Figure 9-9. Planting a Container-Grown Tree-Remove Container Prior to Backfilling Hole

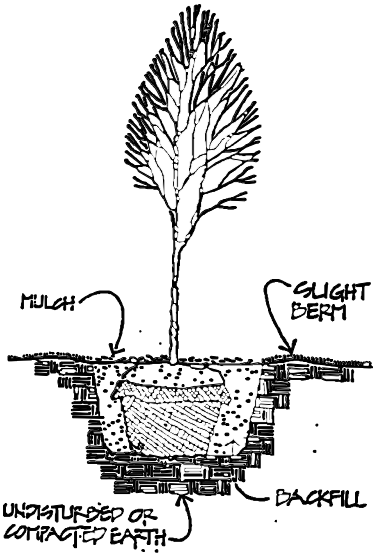


Figure 9-8. Planting a Balled and Burlapped Tree Remove Wrapping Before Backfilling Hole

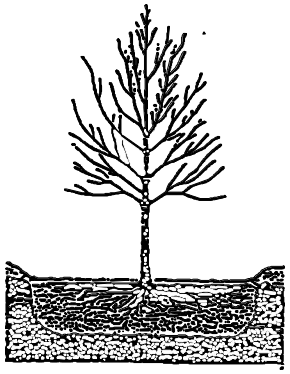


Figure 20. The planting hole should be wide enough to permit a minimum of 1 to 2 feet (30 to 60 cm) of backfill of good topsoil beyond the tips of the roots.

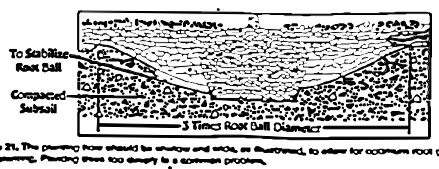
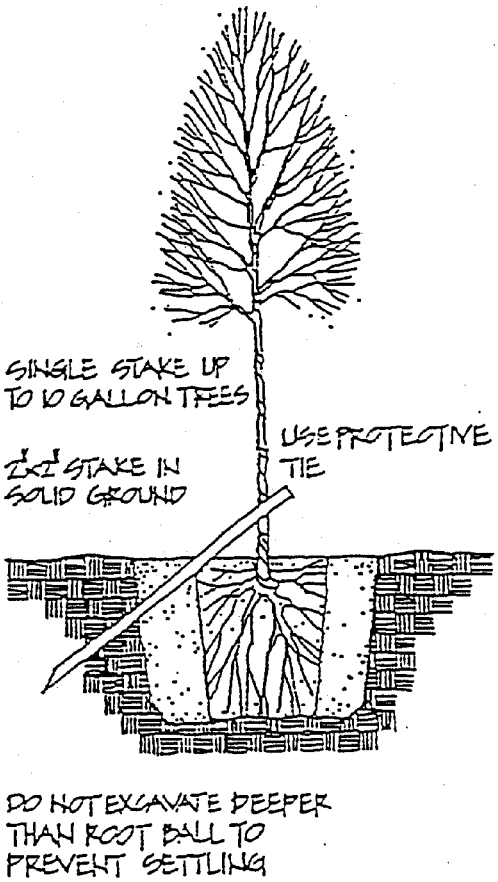


Figure 21. The planting hole should be shallow and wide, as illustrated, to allow for optimum root growth after planting. Planting trees too deeply is a common problem.

STAKING NEWLY PLANTED TREE

Trees Under 2 Inches In Diameter

If protection is not needed, secure the root ball and support the tree with one stake. Drive a 2 inch square, tree stake at a 45 degree angle into the direction of the prevailing wind into the soil just missing the top of the root ball. Secure the trunk to the stake with a protective tie 1 to 2 feet above the soil. Developed by Tom Stille, this method of staking small trees, B and B and container stock smaller than 10 gallons in size secures the root system and supports the young tree as well (Figure 9-16).



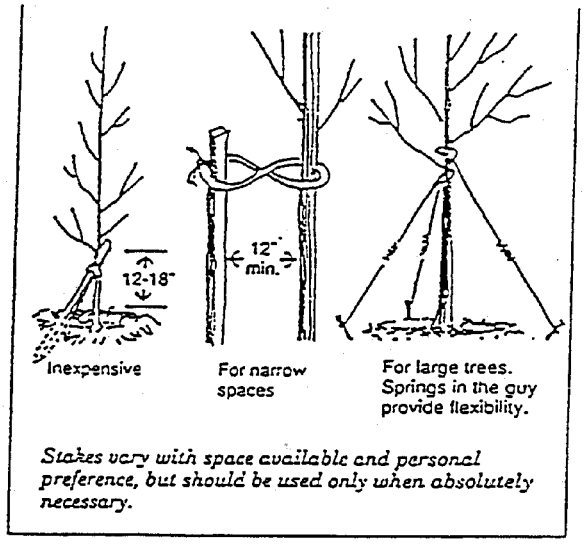


Figure 9-16. Staking to Stabilize the Root Ball. Designed by Tom Stilles.

PRUNING NEWLY PLANTED TREE

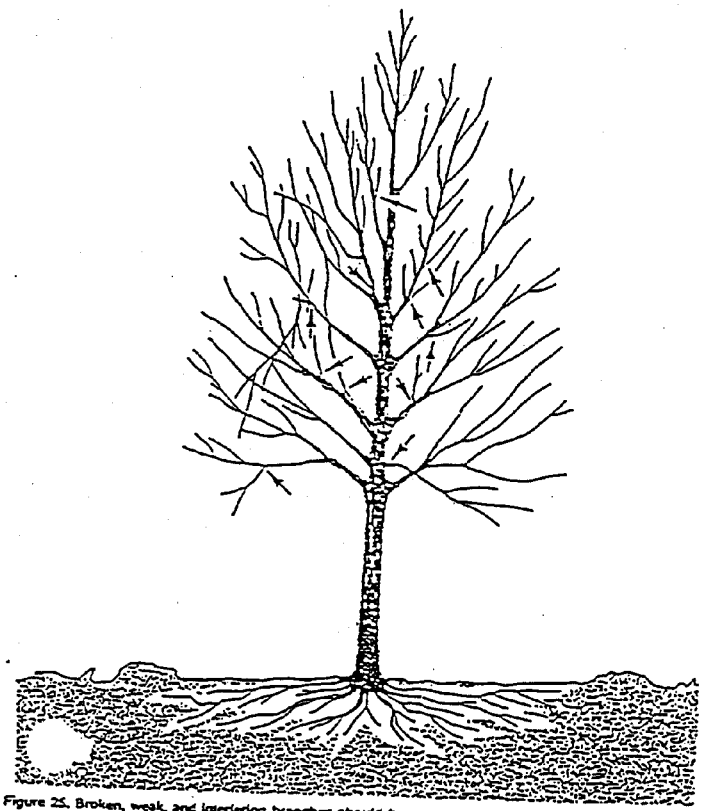
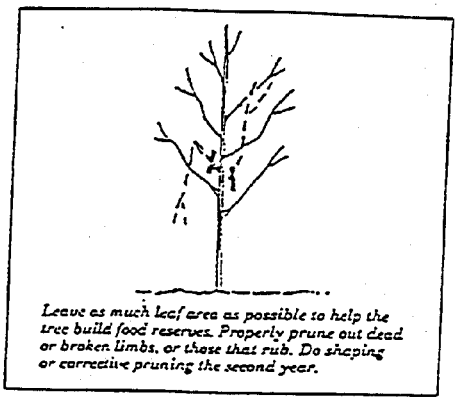


Figure 25. Broken, weak, and interfering branches should be removed at the time of planting. Selective pruning may be necessary to maintain the typical form of the species. Black arrows indicate branches that should be removed on a newly planted tree.



Leave as much leaf area as possible to help the tree build food reserves. Properly prune out dead or broken limbs, or those that rub. Do shaping or corrective pruning the second year.

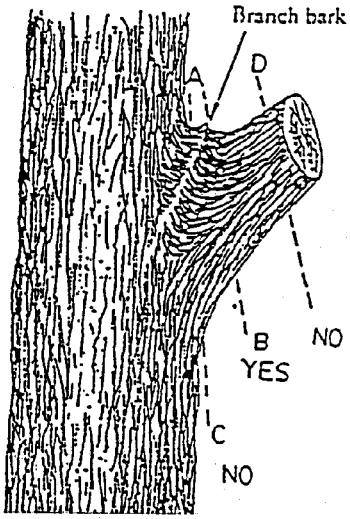


Figure 6. Proper location of pruning cut at branch collar (courtesy of Alex L. Shigo, "New Tree Health").